State of Maryland

BOARD OF NATURAL RESOURCES

TREES OF MARYLAND

Compiled by
JOSEPH F. KAYLOR
State Forester

MAY, 1946

EDUCATIONAL SERIES NO. 12

DEPARTMENT OF RESEARCH AND EDUCATION
Solomons, Maryland

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PREFACE

The educational program of the Board of Natural Resources has progressed to a point where classes for teachers, college extension courses of three semester hour credits, are being given in three different regions of Maryland during the school year, and several short courses for special groups are held during the year in the Department of Research and Education at Solomons Island. Cordial cooperation in this program has been afforded by the Department of State Forests and Parks in that its personnel have participated in the class room and field work to assure the broadening of the base of understanding on the part of teachers and to stimulate them to arouse the younger generation to meet the challenge of conservation.

This bulletin, "Trees of Maryland," was prepared by Mr. Joseph F. Kaylor, State Forester, to aid teacher and pupil in the identification of the more common trees. Teachers have reviewed and approved its contents and form for upper grade and high school levels, recognizing that the publication is preliminary to an anticipated series on this and other phases of the conservation program of the Department of Research and Education.

R. V. TRUITT,
Director.

HOW OUR FORESTS SERVE US

Our forests serve more useful purposes than most anything else in Nature.

They give us lumber for our houses and our furniture, and wood pulp on which our newspapers are printed and for the fibreboard out of which is made a great variety of packing cases for use at home and overseas.

From the forest we obtain our telephone and telegraph poles, our railroad ties, our fence posts and fuelwood, our mine props, and many other things we could not well do without.

Our chemists use wood cellulose, another product of the forest, as a basis for materials such as cellophane and for a number of the plastics that nowadays we read so much about.

Forests on the slopes above our streams check rapid run-off of heavy rains, and so lessen the danger of destructive floods. They protect the springs that feed our rivers, and in this way help to ensure an even flow of water throughout the year.

For birds and for all other wild life, be it deer, or fox, or rabbit, the forest provides a haven and a home. We go to the forest for hunting and fishing, for rest and for play.

FOREST ENEMIES

Our forests have their enemies, some of them serious enemies, indeed.

Like humans, trees are subject to various diseases. They are also open to attack by destructive insects. Such enemies often damage large areas of woodland, and, in so far as possible, must be kept under control.

But by far the greatest enemy of the forest is FIRE. It damages the older trees and destroys the young ones. Or it may consume the forest altogether. In its path is left little but ruin.

The greatest number of forest fires that occur in Maryland are the result of HUMAN CARELESSNESS. A passing motorist tosses a lighted cigarette or match into the dry underbrush along the roadside. A farmer burns field trash without first taking precautions to see that the fire doesn't get away from him. Between them, the careless smoker and the careless brush burner are responsible, on an average, for three-fourths of all our forest fires.

The only good forest fire is the one that never starts. In nine cases out of ten, fires can be PREVENTED by the use of ordinary CARE. The next best thing is to see that a fire is put out before it can do any real damage. In many high schools throughout Maryland the students have formed groups for enrollment in the Forest Fire Fighters Service, a volunteer organization. Such groups are trained by fire control experts of the Department of State Forests and Parks, and have done much both to prevent and to extinguish fires.

SCHOOL BOYS AND GIRLS, OF WHATEVER AGE, CAN HELP TO PREVENT FOREST FIRES BY SETTING AN EXAMPLE OF CARE WITH FIRE IN AND NEAR THE WOODS.

TREES FOR BEAUTY

Outside the forest, trees continue to serve us well. They provide us with shade, and, on many Maryland farms, with protection against the wind. From them we obtain all kinds of fruits—apples, peaches, pears, plums, and the like—and certain kinds of nuts.

And perhaps most important of all, they give beauty to the land around our homes and to our streets and roadsides. Without trees, this Maryland of ours would be a drab and ugly place in which to live.

A community which neglects to plant or care for shade trees is in every sense backward. In beauty, in comfort, and in public health, the shade tree is of prime importance to the human race.

PARTS OF A TREE

The three major parts of a tree are: (1) the crown, (2) the trunk or bole, and (3) the roots.

The crown consists of the branches, twigs, and foliage.

The trunk is made up of bark (outer and inner), wood, and cambium. Throughout the bark are very small openings known as lenticles or breathing pores. The wood is divided into sapwood, usually light in color, and the darker heartwood. At the center of the heartwood is the pith, a spongy mass of cells. The cambium, composed of a thin layer of cells, is located between the bark and the wood.

The roots anchor the tree in the ground. Some species of trees send their roots into the soil to a depth of from ten to twenty feet. Most trees, however, have their roots within two or three feet of the surface. Trees with deep root systems are less likely to be thrown by wind than are those with shallow root systems.

HOW TREES GROW

For its growth, a tree needs light, heat, moisture, and plant food.

From the air the leaves of a tree absorb carbon dioxide. From the soil the roots absorb water, along with mineral and other food elements, which, in the form of sap, passed through the sapwood to the leaves, where it is combined with the carbon from the air to form the plant food needed by the tree. All this is brought about through the action of sunlight and heat on the green pigment (chlorophyll) in the leaves. Plant food thus manufactured passes from the leaves through the inner bark to growing parts of the tree, or is stored in the heartwood and pith for use as needed.

Growth in trees occurs in three ways:

1. Diameter growth of the trunk, branches, and roots.

2. Growth in length of twigs through the development of terminal buds.

3. Growth at the root tips by cell division.

Diameter growth is what concerns us most. Here is where the cambium functions, for its cells have the power to divide and grow, forming bark on the bark side and wood cells on the side toward the wood. In this way a coat of new wood is added each year, and in cross section (on a tree stump) the various coats appear as rings around rings which correspond in number with the age of the tree. If there are, say, forty annual rings, it means the tree, when cut, was forty years old.

TREE DESCRIPTIONS

The trees described in the following pages are not the only ones to be found in Maryland, but they are the most important, either for their timber or for ornament. Each tree has two kinds of names—the common one most of us use and the one used by botanists. Both names are given.

WHITE PINE

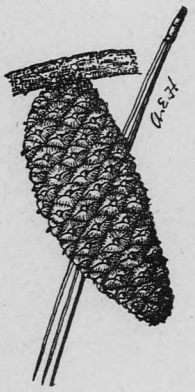
Pinus strobus Linnaeus

The white pine occurs naturally throughout the mountains and in the adjacent region, and is widely planted elsewhere. Trees are tall and stately. The bark is thin and greenish-red on young trees, but thick, deeply-furrowed, and grayish-brown on older ones. The lumber is in large demand for construction purposes, box boards, matches, and many other products.

RED OR NORWAY PINE

Pinus resinosa Solander

Though not native to Maryland, the red or Norway pine is widely planted. As the tree matures, the bark becomes divided into large reddish brown plates, which gives the tree its characteristic appearance and one of its common names. The lumber, which is coarser grained than that of white pine, is used for general construction.



LOBLOLLY PINE

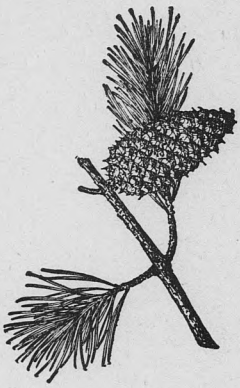
Pinus taeda Linnaeus

Loblolly pine is the chief lumber tree of the Eastern Shore, and is found also in the coastal region of Southern Maryland. The bark is dark in color and deeply furrowed, and may be as much as two inches thick. The wood is used for building material, box shooks, barrel staves, basket veneers, pulpwood, lath, mine props, piling, and fuel.

VIRGINIA PINE

(Scrub Pine or Spruce Pine)

Pinus virginiana Miller



The Virginia or scrub pine is found rather generally throughout the State except in the coastal region. The side branches, even though dead, persist for many years, which gives the tree a scrubby appearance. The bark is thin, and, though broken into plates, appears rather smooth. The wood, which is very knotty, finds its chief use as paper pulp and as fuelwood.

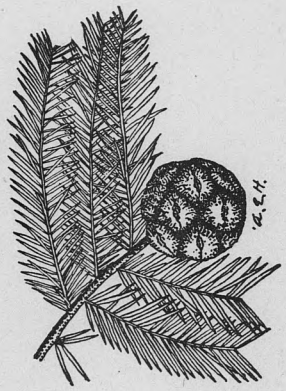
HEMLOCK

Tsuga canadensis (Linnaeus) Carriere

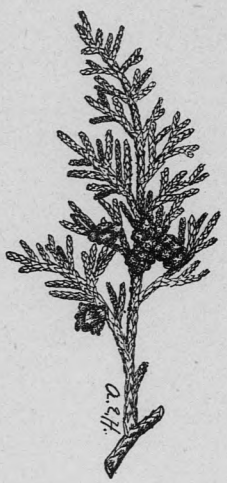
The hemlock is a large timber tree found throughout the mountains and to a lesser extent in adjacent regions. The bark of mature trees is cinnamon-red or dark gray, divided into narrow, rounded ridges, and is an important source of tannin. The wood is used for coarse lumber and for paper pulp.

CYPRESS

Taxodium distichum (Linnaeus) Richard



Cypress is confined to swamps and to wet stream banks and bottomlands in the coastal region of the State. The bark is silvery to cinnamon-red, and finely divided by numerous longitudinal fissures. The wood is very durable, and is in demand for exterior trim, greenhouse planking, boat building, shingles, posts, and poles.



SOUTHERN WHITE CEDAR

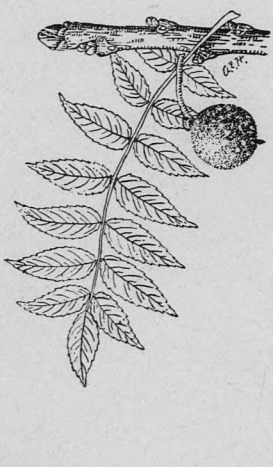
Chamalcyparis thyoides (Linnaeus) Britton

This tree is confined to the coastal region of the State, mainly in swamps. The bark is quite thin, varies in color from ashy gray to light reddish brown, and easily peels off in long strips. The wood is in demand for boats and canoes, as well as for cooperage, shingles, fence posts, and telephone poles.

RED CEDAR

Juniperus virginiana Linnaeus

A very valuable tree found throughout the State except in the mountains. The bark is reddish brown and very thin. The heartwood is red and the sapwood white, an attractive color combinanation for chests, closets, and interior woodwork. It is also much in demand for lead pencils, posts, and poles.



BLACK WALNUT

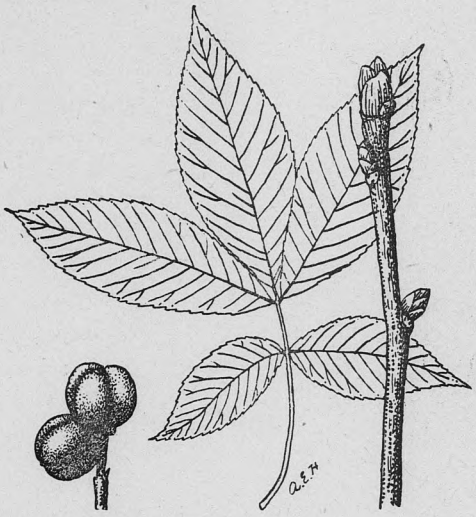
Juglans nigra Linnaeus

This valuable forest tree is found throughout the State. The bark, dark brown in color, is divided into rounded ridges. The heartwood is highly prized for a great variety of uses, including furniture and cabinet work. It is the best of all woods for gun stocks. The nuts of black walnut are edible and of fine flavor.

SHAGBARK HICKORY

Hicoria ovata (Miller) Britton, *Carya avata* Koch

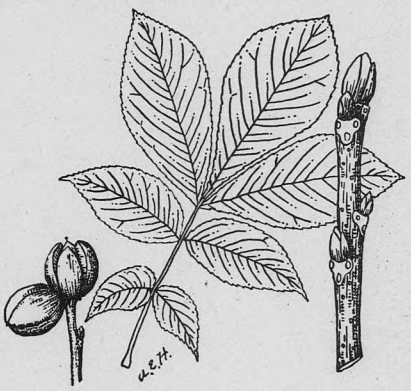
This is a large commercial tree common in the State except in the coastal region. The bark is rough, light gray in color, and is in plates that are only slightly attached to the tree. Its very strong wood is used for agricultural implements, tool handles, and wagon stock. As fuelwood, the various hickories are unsurpassed.



WHITE OR MOCKERNUT HICKORY

Hicoria alba (Linn) Britton
Carya alba Koch

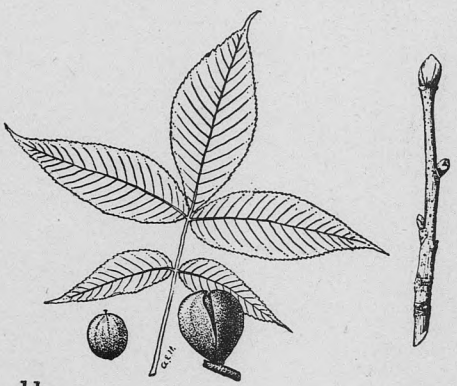
The white hickory is common throughout the State. The bark is dark gray, hard, closely and deeply furrowed, often apparently cross-furrowed or netted. The wood is white, except for a small dark-brown heart. It is used for the same purposes as other hickories.

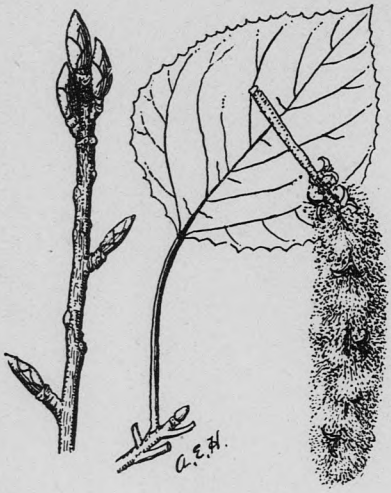


PIGNUT HICKORY

Hicoria glabra (Miller) Sweet, *Carya glabra* Sweet

Pignut hickory is found in all parts of Maryland. The bark is close, ridged and grayish, but occasionally rough and flaky. The wood is put other hickories.
to the same uses as that of





QUAKING ASPEN

Populus tremuloides Michaux

This tree is found mainly in the mountain regions of the State. The young branchlets are reddish brown and shiny, but after the first year turn to gray and become roughened. The wood is extensively used for paper, pulp, and for food containers.

BIG-TOOTHED ASPEN

Populus grandidentata Michaeux

This tree is often found in mixture with quaking aspen. The bark is smooth and greenish gray in color. The wood is used in the manufacture of paper, excelsior, and to a small extent for woodenware.

COTTONWOOD

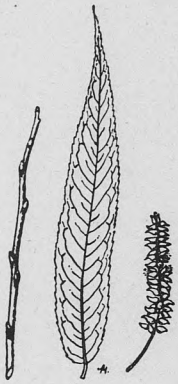
Populus deltoides Marshall

Cottonwood, or Carolina poplar occurs throughout the State, except in the mountains, but nowhere in abundance. The wood is soft and light, and make the highest grade of gloss magazine paper for printing and halftone illustrations.

BLACK WILLOW

Salix nigra Marshall

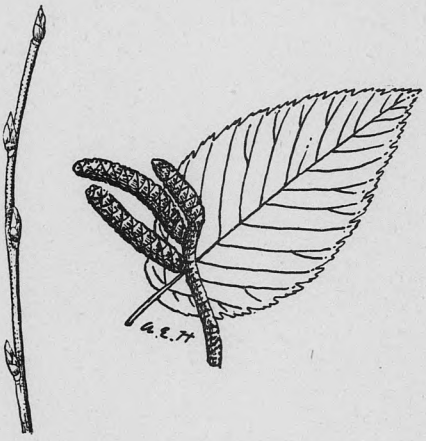
Black willow is common along streams throughout the State except in the high mountains. The bark is deeply divided into broad, flat ridges, which separate into thick plate-like scales. Willow wood gives a high grade charcoal, used in the manufacture of gun-powder, and is the chief wood employed for artificial limbs.



SWEET BIRCH

Betula lenta Linnaeus

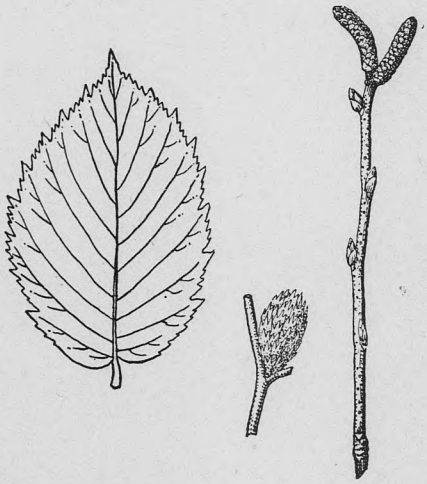
This tree occurs mostly in the highlands, but is found along the banks of streams on the western shore of the Chesapeake Bay. The bark is dark brown, almost black, broken into large irregular plates. The wood is used for furniture, flooring and interior trim. It is prized as firewood.

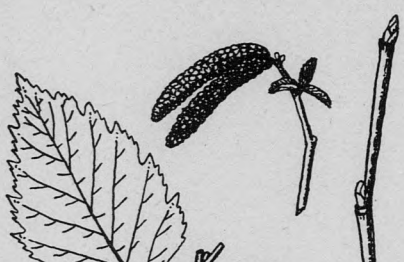


YELLOW BIRCH

Betula lutea Michaux

Yellow birch is confined to the cool high slopes. In young trees the bark is silvery or yellow. On the large trees it is made up of irregular brown plates. The wood is used for flooring, woodenware, furniture, and other uses.

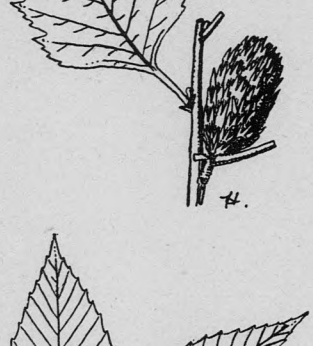




RIVER BIRCH

Betula nigra Linnaeus

This tree is the only native birch found at low elevation. The bark varies from reddish brown to cinnamon-red and presents a very ragged and distinctive appearance. The wood is used in turnery and for wagon hubs.



BEECH

Fagus grandifolia Ehrhart

Beech is found throughout the State. The bark, a very distinctive characteristic, remains an unbroken light gray, so much used by jack-knife owners that the beech has been designated as "the intial tree." The wood is used to some extent for furniture, flooring, carpenters' tools, and novelty wares.

NORTHERN RED OAK

Quercus borealis maxima
(Marshall Ashe formerly
Q. rubra Linnaeus)

This tree is found throughout the State, but is most common on the higher situations. The bark on young trees is smooth, gray to brown. On old trees it is thick and broken into smooth-surfaced plates. The wood is used for cooperage, interior finish, furniture, and crossties.

BLACK OAK

Quercus velutina
La Marck

Black oak is fairly common in Maryland. The bark on very young trees is smooth and dark brown but soon becomes thick and black with deep furrows and rough broken ridges. The wood is used for the same purposes as red oak, and is often put on the market under that name.

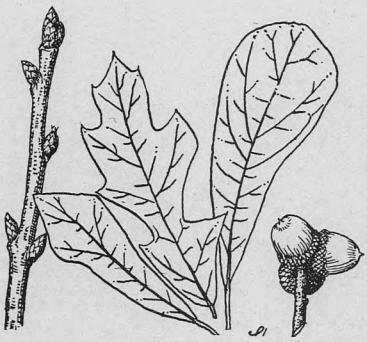
SOUTHERN RED OAK

Quercus rubra Linnaeus, formerly *Q. digitata* Sudworth

Southern red oak, sometimes called Spanish oak, is common throughout the uplands. The bark is rough, though not deeply furrowed, and varies from light gray in young trees to dark gray or almost black on older ones. The wood is used for rough lumber and for furniture, chairs, tables, etc. The bark is rich in tannin. The tree is widely planted for ornament.

WATER OAK

Quercus nigra Linnaeus

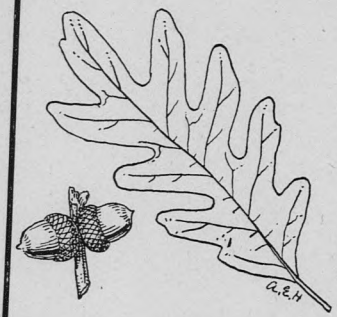


Water oak is found along the borders of swamps and streams and on rich bottomlands over the Coastal Plain. The bark is smooth, light brown winged with red, and with many smooth thin scales over the surface. The wood is used for building, cross ties and fuel.

MARYLAND STATE TREE

WHITE OAK

Quercus alba Linnaeus



White oak is one of the most important of our timber trees. The bark is thin, light ashy gray, and covered with loose scales on broad plates. The wood is used for a great variety of purposes, including shipbuilding, tight cooperage, implements interior finish, flooring, and fuel.

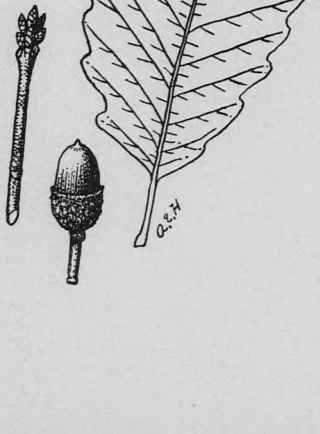
WILLOW OAK

Quercus phellos Linnaeus

Willow oak is commonly found with water oak. The slender, willow-like leaves distinguish it from the latter species. The bark is smooth and reddish brown in color. The wood is used locally for cross ties, bridge planks, barn sills, and general construction.

CHESTNUT OAK

Quercus montana Willdenow, formerly *Q. prinus* Linnaeus

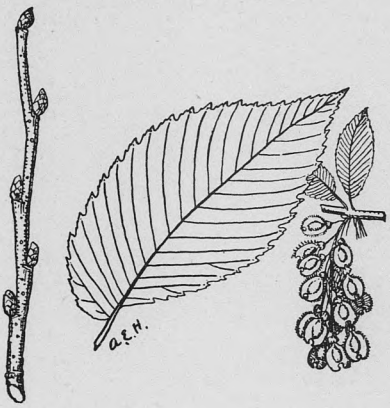


This tree derives its name from the leaves which resemble those of the chestnut. The bark is dark, reddish brown, deeply divided into broad, rounded ridges, and is used for the extraction of tannic acid. The wood is extensively used for cross ties, heavy bridge timbers, and other rough construction.

AMERICAN ELM

Ulmus americana Linnaeus

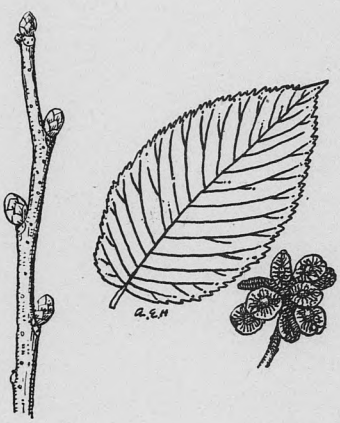
This is the famous shade tree of New England. Its range is very extensive except in the high mountains and wet bottomlands. The bark is dark gray, divided into irregular flat-topped, thick ridges. The wood is used for wheel hubs, saddle trees, boats and barrel hoops, and veneer for baskets and crates.



SLIPPER ELM

Ulmus fulva Michaux

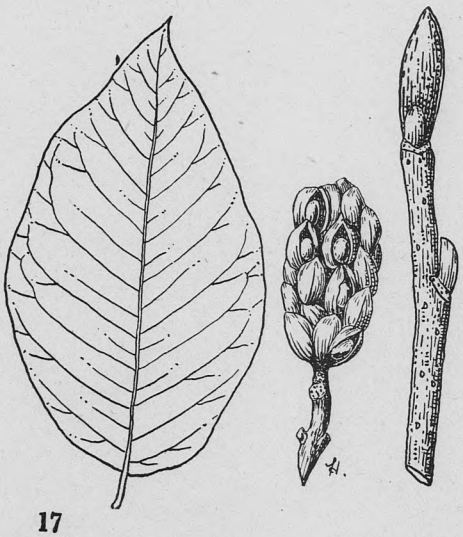
Slippery elm grows in all sections of the State outside of the high mountains, but is nowhere abundant. The bark is dark grayish brown, broken by shallow fissures into flat ridges. When chewed it affords a slippery, mucilaginous substance, from which the tree gets its name. The wood is used for fence posts, cross ties, agricultural implements, and a few other purposes.



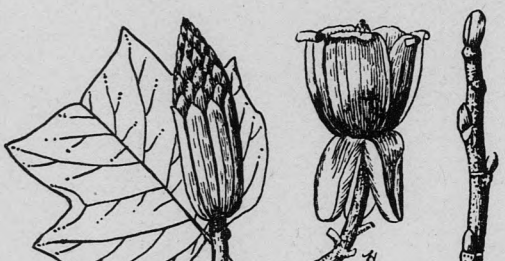
CUCUMBER TREE

Magnolia acuminata Linnaeus

The cucumber tree is the only one of our magnolias which has a rough bark and a small leaf. The bark of the trunk is rather thin, dark, brown, and broken into thin scales. The wood is used for cabinet and carriage making, and for a number of other purposes.



YELLOW POPLAR



Liriodendron tulipfera Linnaeus

Yellow poplar is one of the most valuable of all hardwood timber trees. It derives its name from the greenish yellow, tulip-shaped flowers which appear in the spring. The wood is extensively cut into lumber for interior and exterior trim, vehicle bodies, veneers, turnery and other high-grade uses.

SASSAFRAS

Sassafras variifolium Kuntze

The sassafras is a small aromatic tree, usually not over 40 feet in height or a foot in diameter. It is common throughout the State on dry soils, but rare in the higher mountains. It is one of the first broad-leaf trees to come in on abandoned fields.

The wood is light, soft, weak, brittle, and durable in the soil. It is used for posts, rails, boat-building, and cooperage.

SWEET GUM, OR RED GUM

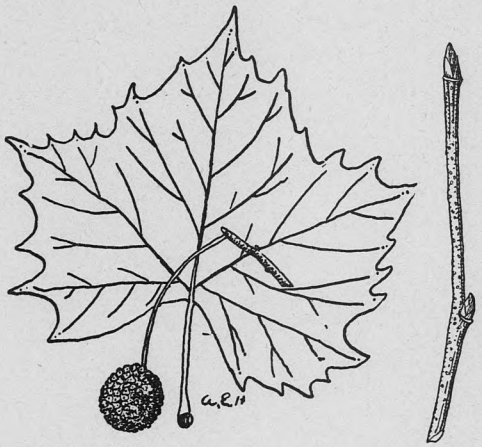
Liquidambar styraciflua Linnaeus

The sweet gum is a valuable forest tree, and is abundant in second growth on old fields and cut over woods. The bark is a light gray, roughened by corky scales, later becoming deeply furrowed. The reddish brown heartwood is extensively used for flooring, interior finish, and veneers of all kinds.

SYCAMORE

Platanus occidentalis
Linnaeus

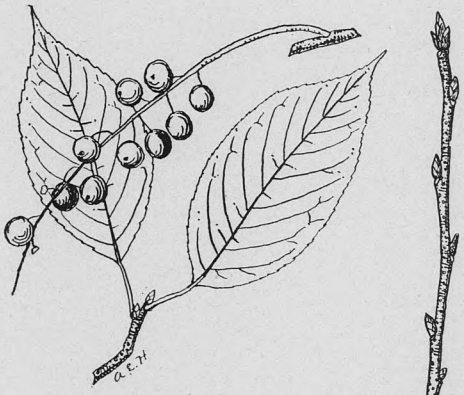
The sycamore, also called buttonwood, occurs in all parts of the State except in the high mountains. The bark of the sycamore is a characteristic feature. On the younger trunk and large limbs it is very smooth, greenish gray in color. The outer bark yearly flakes off in large patches and exposes the nearly white younger bark. It is used for butchers' blocks, tobacco boxes, furniture and interior finish.



WILD BLACK CHERRY

Prunus seratina Ehrhart

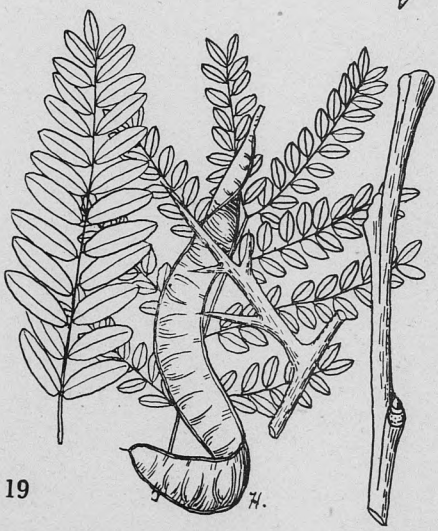
Wild black cherry grows best in the higher mountains. The bark on branches and young trunks is smooth and bright reddish brown, marked by conspicuous narrow, white horizontal lines. On the older trees the bark becomes rough and broken into thick, irregular plates. The wood is used for furniture, interior finish, tools, and implement handles.

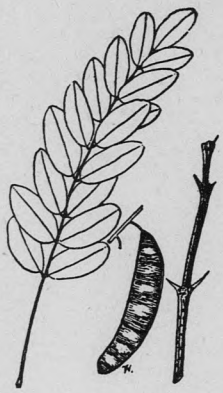


HONEY LOCUST

Gleditsia triacanthos
Linnaeus

Honey locust is scattered throughout the State except in the mountains. The bark on old trees is dark gray and is divided into thin tight scales. The wood is used for fence posts and cross ties. It should not be confused with the very durable wood of the black locust.

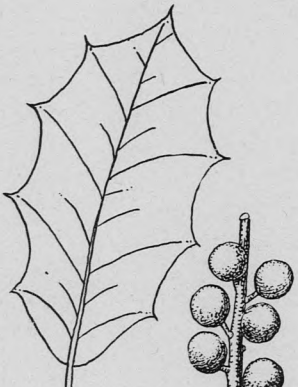




BLACK LOCUST
Yellow Locust

Robinia pseudoacacia Linnaeus

Black locust is found throughout the State. The bark is dark brown and divides into strips as the tree grows older. The wood is used extensively for fence posts, poles, tree nails, insulator pins, and sometimes for lumber and fuel.

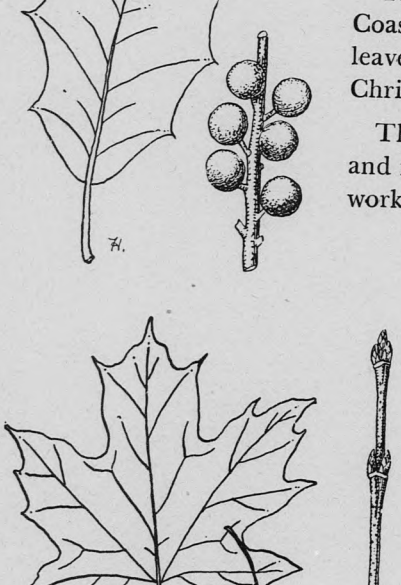


HOLLY

Ilex opaca Aiton

The holly is found throughout the Coastal Plain region of the State. Its leaves, branches, and berries are favorite Christmas decorations.

The wood is light, tough, not strong, and nearly white. It is valued for cabinet work and wood-turning.



SUGAR MAPLE

Acer saccharum Marshall

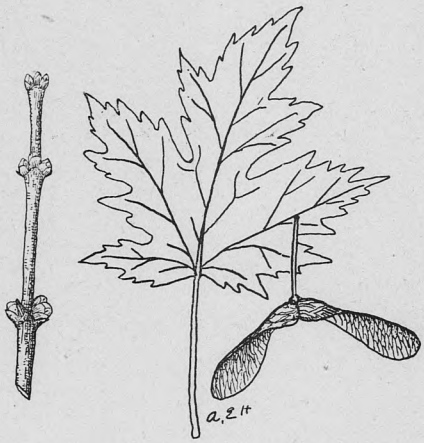
Sugar maple is common only on the cool slopes of our mountains. The bark on young trees is light gray to brown and rather smooth. As the tree grows it breaks up into long irregular plates, which vary from light gray to almost black. The wood is known commercially as hard maple, and is used for furniture, flooring, and a great variety of novelties.

SILVER MAPLE

Acer saccharinum Linnaeus

The silver maple is found mainly on moist lands and along streams. It attains a height of 100 feet or more and diameters of 2 feet or over. It usually has a short trunk which divides into large ascending limbs.

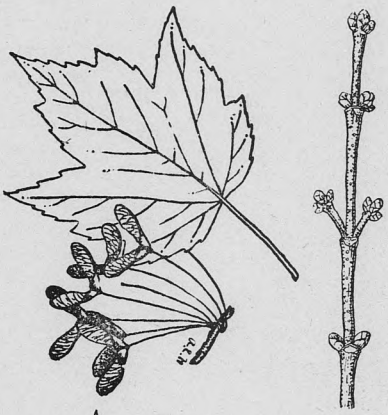
The wood is soft, weak, even-textured, rather brittle, and easily worked. It decays quickly however when exposed to the weather, though it finds use for box boards, furniture, and fuel.



RED MAPLE

Acer rubrum Linnaeus

Red maple, or swamp maple, is widely distributed throughout Maryland. The bark is smooth, running from light to dark gray as the tree ages. The wood is used for furniture, turnery, woodenware, and also for fuel.

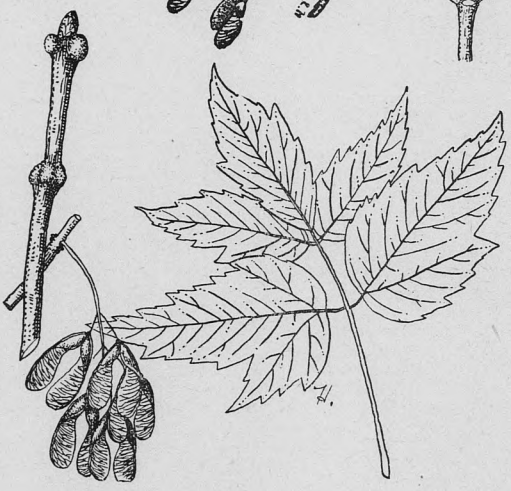


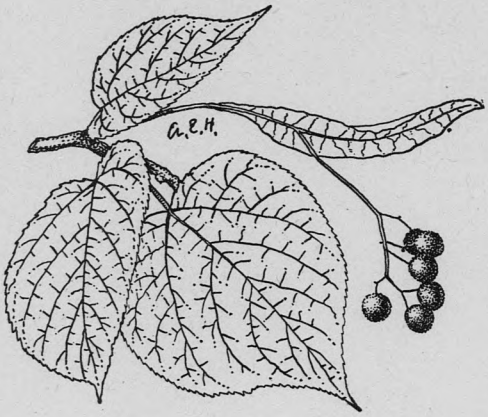
BOX ELDER

(Ash-Leaf Maple)

Acer negundo Linnaeus

Box elder occurs rather generally along the streams throughout the state. The bark on old trees is thin, grayish to light brown and deeply divided. The wood is used occasionally for fuel.

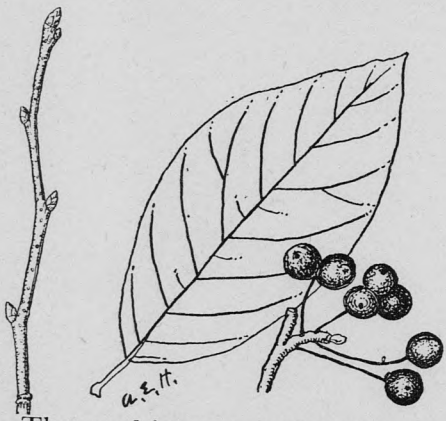




BASSWOOD, OR LINDEN

Tilia sp.

Basswood grows chiefly in the mountains. The bark is light brown and deeply furrowed. The wood is used in the manufacture of pulp, woodenware, furniture, trunks, excelsior and the like.

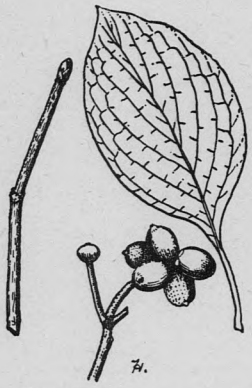


BLACK GUM

Nyssa sylvatica Marshall

The black gum, often called sour gum, has been considered a weed in the forest. In the lowlands it is occasionally found in year-round swamps with cypress, and in the hills and mountains on dry slopes with oaks and hickories.

The wood is very tough, hard to work, and warps easily. It is used for crate and basket veneers, box shooks, rough floors, pulpwood and fuel.



DOGWOOD

Cornus florida Linnaeus

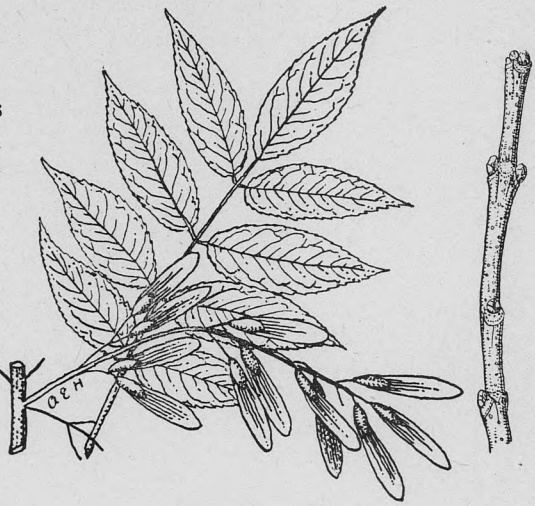
The dogwood grows throughout the State, usually under the larger forest trees. It is a small tree. Its flowers are especially beautiful, and the tree is often called flowering dogwood.

The wood is hard, heavy, strong, very close-grained, brown to red in color. It is in great demand for cotton-mill machinery, turnery handles and forms. Another tree with very similar wood is persimmon.

WHITE ASH

Fraxinus americana
Linnaeus

White ash grows throughout the State. The bark varies in color from a light gray to gray-brown. The wood of the white ash is extremely tough and elastic, and is preferred to all other native woods for small tool handles, athletic equipment, oars, and agricultural implements.



GREEN ASH

Fraxinus pennsylvanica lanceolata

(Borkhausen) Sargent

Green ash is found along the streams in all but the mountains of Maryland. The bark is a half inch thick or more, brown, tinged with red and slightly furrowed. The wood, though not as valuable as that of the white ash, is used for the same purposes.